UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,192	01/14/2004	Jimmie Earl DeWitt JR.	AUS920030543US1	3593

				EXAMINER
35525	7590	06/16/2006		PHAN, RAYMOND NGAN

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ART UNIT	PAPER NUMBER
2111	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/757,192	DEWITT ET AL.
	Examiner	Art Unit
	Raymond Phan	2111

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-53* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-53* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *03242006*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Part III   DETAILED ACTION

Notice to Applicant(s)

1.   This action is responsive to the following communications: amendment filed on March 14, 2006.

2.   This application has been examined. Claims 1-53 are pending.

Specification

3.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hammond et al. (US No. 6,408,386) in view of Henzinger et al. (US No. 5,857,097).

In regard to claims 1, 12, 22, 33, 44, Hammond et al. disclose a method of processing performance information in a data processing system (see abstract), comprising the steps of: receiving an interrupt signal at an interrupt unit of a processor of the data processing system (see figure 5a&b, col. 9, line 57 through col. 10, line 48); determining if at least one of a pre handler routine 233 and a post handler routine 243 are enabled for an interrupt (see figure 5a, col. 10, lines 29-49); invoking the pre handler routine to record events at a first instant if the pre routine is enabled (see col. 10, lines 36-42); invoking an interrupt handler routine (see col. 10, lines 36-42); and invoking the post handler routine to record events at

a second instant if the post handler routine is enabled (see col. 10, lines 42-48).
But Hammond et al. do not specifically disclose the step of invoking an interrupt
handler routines following the execution of the pre-handler routine and invoking
the post-handler routing following execution of the interrupt handler routine to
record events. However Henzinger et al. disclose the step of invoking an interrupt
handler routines 1380 following the execution of the pre-handler routine 1360 and
invoking the post-handler routine 1390 following execution of the interrupt handler
routine to record events (see figure 13, col. 23, line 48 through col. 24, line 30).
Therefore, it would have been obvious to a person of an ordinary skill in the art at
the time the invention was made to have combined the teachings of Henzinger et
al. within the system of Hammond et al. because it would reduce the system stalled
and improve the system performance.

In regard to claims 2, 14, 35, 47, Henzinger et al. teach the method and
system for performance monitoring comprising the step of recording events
including recording a plurality of counts (see col. 23, lines 63-67). Therefore, it
would have been obvious to a person of an ordinary skill in the art at the time the
invention was made to have combined the teachings of Henzinger et al. within the
system of Hammond et al. because it would reduce the system stalled and improve
the system performance.

In regard to claims 3, 17, 27, 38, 49, Henzinger et al. disclose wherein
recording events includes recording a timestamp (i.e. retired) (see col. 23, lines 40-
47). Therefore, it would have been obvious to a person of an ordinary skill in the
art at the time the invention was made to have combined the teachings of
Henzinger et al. within the system of Hammond et al. because it would reduce the
system stalled and improve the system performance.

In regard to claims 4, 15, 25, 36, 48, Henzinger et al. disclose wherein the count represents the number of times an event occurs (see col. 23, lines 40-47). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claims 5, 16, 26, 37, 50, Henzinger et al. disclose wherein the event is selected from the group consisting of cache misses and number of instructions executed (see col. 25, lines 43-51). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claims 6, 19, 29, 40, 52, Henzinger et al. disclose wherein the first and second instants are associated with first and second timestamps, respectively (see col. 23, lines 55-61). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claims 7, 18, 28, 39, 51, Hammond et al. disclose further a plurality of pre handler routines and a plurality of post handler routines, wherein each pre handler routine and each post handler routine records a different event on the occurrence of an interrupt (see col. 10, lines 3-28).

In regard to claim 8, Henzinger et al. disclose wherein recording events includes accumulating a total value of counts (see col. 24, lines 37-52). Therefore,

it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claim 9, Henzinger et al. disclose wherein the total value of counts is accumulated by adding counts of events recorded (see col. 24, lines 37-52). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claim 10, Henzinger et al. disclose wherein the total value of counts is displayed in a performance analysis tool (see col. 23, lines 47-62). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claim 11, 30, 42, 53, Henzinger et al. disclose wherein the count is not updated when the pre or post handler routine is invoked (see col. 23, line 63 through col. 24, line 18). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claim 13, 23, 34, 45-46, Hammond et al. disclose wherein the trace record includes from an address of an instruction indicating where the interrupt occurs (see col. 10, lines 14-28).

In regard to claims 20, 31, 41, Hammond et al. disclose a method of processing performance information in a data processing system (see abstract), comprising the steps of: receiving an interrupt signal at an interrupt unit of a processor of the data processing system (see figure 5a&b, col. 9, line 57 through col. 10, line 48); determining if at least one of a pre handler routine 233 and a post handler routine 243 are enabled for an interrupt (see figure 5a, col. 10, lines 29-49); invoking the pre handler routine to record events at a first instant if the pre routine is enabled (see col. 10, lines 36-42); invoking an interrupt handler routine (see col. 10, lines 36-42); and invoking the post handler routine to record events at a second instant if the post handler routine is enabled (see col. 10, lines 42-48). But Hammond et al. do not specifically disclose the step of invoking an interrupt handler routines following the execution of the pre-handler routine and invoking the post-handler routing following execution of the interrupt handler routine to record events; wherein the pre-handler routine or post-handler routine monitors a count of recorded events to determine if an overflow occurred. However Henzinger et al. disclose the step of invoking an interrupt handler routines 1380 following the execution of the pre-handler routine 1360 and invoking the post-handler routine 1390 following execution of the interrupt handler routine to record events (see figure 13, col. 23, line 48 through col. 24, line 30); wherein the pre-handler routine or post-handler routine monitors a count of recorded events to determine if an overflow occurred (see col. 25, line 32-52). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

In regard to claims 21, 32, 43, Henzinger et al. disclose wherein the pre-handler or post-handler handles the overflow by reading and resetting the counts (see col. 23, line 63 through col. 24, line 26). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Henzinger et al. within the system of Hammond et al. because it would reduce the system stalled and improve the system performance.

Response to Amendment

6.   Applicant's amendment and arguments, see pages 4-17, filed March 14, 2006, with respect to the rejections of claims 1-53 under 35USC102/103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Henzinger et al.

Conclusion

7.   Claims 1-53 are rejected.

8.   The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

> **Thangadurai et al. (US No. 5,745,770)** disclose a method and apparatus for servicing simultaneously I/O trap and debug traps in a microprocessor.
>
> **Ito (US No. 6,820,155)** discloses an interruption managing device and interruption managing method.

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (571) 272-3630. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (571) 272-3639 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to **[raymond.phan@uspto.gov]**.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see hop://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 central telephone number is (571) 272-2100.
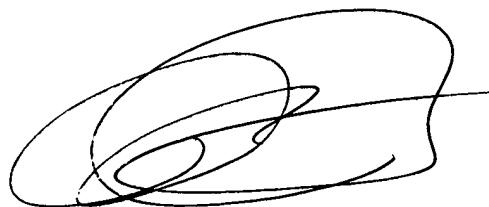
MARK H. RINEHART.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Raymond Phan
May 22, 2006